

<b>PCN Number:</b>	20140115002			<b>PCN Date:</b>	01/22/2014
<b>Title:</b>	Qualification of Cu as Alternative Wire Base Metal for Selected Device(s)				
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Phone:</b>	+1(214)480-6037	<b>Dept:</b>	Quality Services
<b>Proposed 1<sup>st</sup> Ship Date:</b>	04/22/2014		<b>Estimated Sample Availability:</b>	Date provided at sample request	
<b>Change Type:</b>					
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process	<input checked="" type="checkbox"/>	Assembly Materials
<input type="checkbox"/>	Design	<input type="checkbox"/>	Electrical Specification	<input type="checkbox"/>	Mechanical Specification
<input checked="" type="checkbox"/>	Test Site	<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Wafer Bump Material	<input type="checkbox"/>	Wafer Bump Process
<input type="checkbox"/>	Wafer Fab Site	<input type="checkbox"/>	Wafer Fab Materials	<input type="checkbox"/>	Wafer Fab Process
<input type="checkbox"/>		<input type="checkbox"/>	Part number change	<input type="checkbox"/>	

### PCN Details

#### Description of Change:

Texas Instruments is pleased to announce the qualification of Cu as an additional bond wire option for devices listed in "Product affected" section below. Material differences are shown in the following table:

#### Group 1 Device: Devices will remain in current assembly facility

	From	To
<b>Wire type</b>	Au	Cu
<b>Mold Compound</b>	R-13	R-17
<b>Leadframe Finish</b>	NiPdAu	Matte Sn

Upon expiration of this PCN, TI will combine lead free solutions in a single [standard part number](#), for example; [SN001066DBVR](#) – can ship with both Matte Sn and NiPdAu.

#### Group 2 Device: MLA as additional Assembly and Test Site

	CAR	MLA
<b>Wire type</b>	Au	Cu
<b>Mold Compound</b>	438578	4206193

Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.

#### Reason for Change:

Continuity of supply.

- 1) To align with world technology trends and use wiring with enhanced mechanical and electrical properties
- 2) Maximize flexibility within our Assembly/Test production sites.
- 3) Cu is easier to obtain and stock

**Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):**

None.

**Changes to product identification resulting from this PCN:**

**Group 1 Device: Devices will remain in current assembly facility**

ECAT: G4 = NiPdAu  
ECAT: G3 = Matte Sn

Assembly Site

NFME	Assembly Site Origin (22L)	ASO:NFME	ECAT:G4
NFME	Assembly Site Origin (22L)	ASO: NFME	ECAT:G3

**Sample product shipping label to show code location only (not actual product label)**

TEXAS INSTRUMENTS  
MADE IN: Malaysia  
2DC: 20:

MSL 2 /260C/1 YEAR	SEAL DT
MSL 1 /235C/UNLIM	03/29/04

OPT: ITEM: 39  
LBL: 5A (L)T0:1750

(Pb) G4

(1P) SN74LS07NSR  
(Q) 2000 (D) 0336  
(31T) LOT: 3959047MLA  
(4W) TKY (1T) 7523483SI2  
(P)  
(2P) REV: (V) 0033317  
(20L) CSO: SHE (21L) CCO:USA  
(22L) ASO: MLA (23L) ACO: MYS

**Group 2 Device: CAR to MLA**

Assembly Site		
CARSEM Malaysia	Assembly Site Origin (22L)	ASO: CAR
TI Malaysia	Assembly Site Origin (22L)	ASO: MLA

ASSEMBLY SITE CODES: CAR = V , MLA = K

**Sample product shipping label (not actual product label)**

TEXAS INSTRUMENTS  
MADE IN: Malaysia  
2DC: 20:

MSL 2 /260C/1 YEAR	SEAL DT
MSL 1 /235C/UNLIM	03/29/04

OPT: ITEM: 39  
LBL: 5A (L)T0:1750

(Pb) G4

(1P) SN74LS07NSR  
(Q) 2000 (D) 0336  
(31T) LOT: 3959047MLA  
(4W) TKY (1T) 7523483SI2  
(P)  
(2P) REV: (V) 0033317  
(20L) ~~CSO: SHE~~ (21L) CCO:USA  
(22L) ASO: MLA (23L) ACO: MYS

<b>Product Affected: Group 1 Device</b>			
SN001066DBVR	SN74AHCT1G04DBVT	SN74AUP1G17DBVT	SN74LVC1G332DBVR
SN003166DBVR	SN74AHCT1G08DBVR	SN74AUP1G97DBVR	SN74LVC1G79DBVR
SN74AHC1G02DBVR	SN74AHCT1G08DBVT	SN74CB3T1G125DBVR	SN74LVC1G79DBVT
SN74AHC1G02DBVT	SN74AHCT1G125DBVR	SN74LVC1G00DBVR	SN74LVC1G80DBVR
SN74AHC1G04DBVR	SN74AHCT1G125DBVT	SN74LVC1G00DBVT	SN74LVC1G80DBVT
SN74AHC1G04DBVT	SN74AHCT1G126DBVR	SN74LVC1G02DBVR	SN74LVC1G86DBVR
SN74AHC1G08DBVR	SN74AHCT1G126DBVT	SN74LVC1G02DBVT	SN74LVC1G86DBVT
SN74AHC1G08DBVT	SN74AHCT1G32DBVR	SN74LVC1G06DBVR	SN74LVC1GU04DBVR
SN74AHC1G09DBVR	SN74AHCT1G32DBVT	SN74LVC1G06DBVT	SN74LVC1GU04DBVT
SN74AHC1G125DBVR	SN74AHCT1G86DBVR	SN74LVC1G07DBVR	SN74LVC2G04DBVR
SN74AHC1G125DBVT	SN74AHCT1G86DBVT	SN74LVC1G07DBVT	SN74LVC2G04DBVT
SN74AHC1G126DBVR	SN74AUC1G00DBVR	SN74LVC1G11DBVR	SN74LVC2G07DBVR
SN74AHC1G126DBVT	SN74AUC1G07DBVR	SN74LVC1G126DBVR	SN74LVC2G14DBVR
SN74AHC1G32DBVR	SN74AUC1G07DBVT	SN74LVC1G126DBVT	SN74LVC2G14DBVT
SN74AHC1G32DBVT	SN74AUC1G14DBVR	SN74LVC1G14DBVR	SN74LVC2G17DBVR
SN74AHC1G86DBVR	SN74AUC1G17DBVR	SN74LVC1G14DBVT	SN74LVC2G17DBVT
SN74AHC1G86DBVT	SN74AUC1G32DBVR	SN74LVC1G17DBVR	SN74LVC2G34DBVR
SN74AHC1GU04DBVR	SN74AUC1G66DBVR	SN74LVC1G17DBVT	SN74LVC2G34DBVT
SN74AHC1GU04DBVT	SN74AUC2G07DBVR	SN74LVC1G240DBVR	TS5A1066DBVR
SN74AHCT1G00DBVR	SN74AUP1G04DBVR	SN74LVC1G240DBVT	TS5A3166DBVR
SN74AHCT1G00DBVT	SN74AUP1G04DBVT	SN74LVC1G27DBVR	TS5A3167DBVR
SN74AHCT1G02DBVR	SN74AUP1G07DBVR	SN74LVC1G3157DBVR	TS5A63157DBVR
SN74AHCT1G02DBVT	SN74AUP1G08DBVR	SN74LVC1G32DBVR	
SN74AHCT1G04DBVR	SN74AUP1G17DBVR	SN74LVC1G32DBVT	
<b>Product Affected: Group 2 Device</b>			
UCC3895PW	UCC3895PWG4	UCC3895PWTR	UCC3895PWTRG4

<b>Qualification Data : Group 1</b>			
This qualification has been developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.			
<b>Qual Vehicle 1 : TL432ACDBVR (MSL 1-260C)</b>			
Package Construction Details			
Assembly Site:	NFME	Mold Compound:	R-17
# Pins-Designator, Family:	5-DBV, SOT-23	Mount Compound:	A-03
Lead frame (Finish, Base):	Matte Sn, Cu	Bond Wire:	1.0 Mil Dia., Cu

<b>Qualification:</b> <input type="checkbox"/> <b>Plan</b> <input checked="" type="checkbox"/> <b>Test Results</b>					
Reliability Test	Conditions	Sample Size/Fail			
		Lot# 1	Lot# 2	Lot# 3	
Electrical Characterization	-	Pass	-	-	
**Unbiased HAST	130C/85%RH/33.3 psia (96 hrs)	77/0	77/0	77/0	
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0	
**High Temp. Storage Bake	170C (600 hrs)	77/0	77/0	77/0	
**Autoclave	121C (192 hrs)	77/0	77/0	77/0	
**Biased HAST	130C/85%RH (192 hrs)	77/0	77/0	77/0	
**Life Test	150C (300 hrs)	77/0	77/0	77/0	
Solderability	Steam age, 8 hours; PB-Free solder	22/0	22/0	22/0	
X-ray	(top side only)	5/0	5/0	5/0	
Flammability	(IEC 695-2-2)	5/0	5/0	-	
Flammability	(UL-1694)	5/0	5/0	-	
Flammability	UL 94V-0)	5/0	5/0	-	
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass	
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	12/0	12/0	12/0	
Notes   **- Preconditioning sequence: Level 1-260C.					
<b>Qual Vehicle 2 : TS321DBVR (MSL 1-260C)</b>					
Package Construction Details					
Assembly Site:	NFME	Mold Compound:	R-17		
# Pins-Designator, Family:	5-DBV, SOT-23	Mount Compound:	A-03		
Lead frame (Finish, Base):	Matte Sn, Cu	Bond Wire:	1.0 Mil Dia., Cu		
<b>Qualification:</b> <input type="checkbox"/> <b>Plan</b> <input checked="" type="checkbox"/> <b>Test Results</b>					
Reliability Test	Conditions	Sample Size/Fail			
		Lot# 1	Lot# 2	Lot# 3	
Electrical Characterization	-	Pass	-	-	
**Unbiased HAST	130C/85%RH/33.3 psia (192 hrs)	77/0	77/0	77/0	
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0	
**High Temp. Storage Bake	170C (600 hrs)	77/0	77/0	77/0	
**Autoclave	121C (192 hrs)	77/0	77/0	77/0	
**Life Test	150C (300 hrs)	77/0	-	-	
Solderability	Steam age, 8 hours; PB-Free solder	22/0	-	-	
X-ray	(top side only)	5/0	5/0	5/0	
Flammability	(IEC 695-2-2)	5/0	-	-	
Flammability	(UL-1694)	5/0	-	-	
Flammability	UL 94V-0)	5/0	-	-	
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass	
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	12/0	12/0	12/0	
Notes   **- Preconditioning sequence: Level 1-260C.					

<b>Qual Vehicle 3 : INA193AIDBVR (MSL 2-260C)</b>			
Package Construction Details			
Assembly Site:	NFME	Mold Compound:	R-17
# Pins-Designator, Family:	5-DBV, SOT-23	Mount Compound:	A-03
Lead frame (Finish, Base):	Matte Sn, Cu	Bond Wire:	1.0 Mil Dia., Cu
<b>Qualification:</b> <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results			
Reliability Test	Conditions	Sample Size/Fail	
		Lot# 1	Lot# 2
Electrical Characterization	-	10/0	-
**Unbiased HAST	130C/85%RH/33.3 psia (96 hrs)	77/0	77/0
**Biased HAST	130C/85%RH (192 hrs)	77/0	77/0
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0
**High Temp. Storage Bake	150C (500 hrs)	77/0	77/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)	12/0	12/0
Notes    **- Preconditioning sequence: Level 2-260C.			
<b>Qual Vehicle 4 : TMP121AIDBVR (MSL 2-260C)</b>			
Package Construction Details			
Assembly Site:	NFME	Mold Compound:	R-17
# Pins-Designator, Family:	6-DBV, SOT-23	Mount Compound:	A-03
Lead frame (Finish, Base):	Matte Sn, Cu	Bond Wire:	1.0 Mil Dia., Cu
<b>Qualification:</b> <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results			
Reliability Test	Conditions	Sample Size/Fail	
		Lot# 1	Lot# 2
Electrical Characterization	-	10/0	-
**Unbiased HAST	130C/85%RH/33.3 psia (96 hrs)	77/0	77/0
**Biased HAST	130C/85%RH (192 hrs)	77/0	77/0
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0
**High Temp. Storage Bake	150C (500 hrs)	77/0	77/0
X-ray	(top side only)	5/0	5/0
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)	12/0	12/0
Notes    **- Preconditioning sequence: Level 2-260C.			

<b>Qual Vehicle 5 : TPD4E001DBVR (MSL 1-260C)</b>					
Package Construction Details					
Assembly Site:	NFME	Mold Compound:	R-17		
# Pins-Designator, Family:	6-DBV, SOT-23	Mount Compound:	A-03		
Lead frame (Finish, Base):	Matte Sn, Cu	Bond Wire:	1.0 Mil Dia., Cu		
<b>Qualification:</b> <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results					
Reliability Test	Conditions	Sample Size/Fail			
		Lot# 1	Lot# 2	Lot# 3	
**Unbiased HAST	130C/85%RH/33.3 psia (192 hrs)	77/0	77/0	77/0	
**Biased HAST	130C/85%RH (192 hrs)	77/0	77/0	77/0	
**T/C -65C/150C	-65C/+150C (1000 Cyc)	77/0	77/0	77/0	
**High Temp. Storage Bake	150C (1000 hrs)	77/0	77/0	-	
X-ray	(top side only)	5/0	5/0	5/0	
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass	
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	12/0	12/0	12/0	
Notes    **- Preconditioning sequence: Level 1-260C.					

### Qualification Data : Group 2

This qualification has been developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.					
<b>Qual Vehicle 1 : BQ29330DBT (MSL 2-260C)</b>					
Package Construction Details					
Assembly Site:	MLA	Mold Compound:	4206193		
# Pins-Designator, Family:	30-DBT, TSSOP	Mount Compound:	4042500		
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu		
<b>Qualification:</b> <input type="checkbox"/> Plan <input checked="" type="checkbox"/> Test Results					
Reliability Test	Conditions	Sample Size/Fail			
		Lot# 1	Lot# 2	Lot# 3	
Electrical Characterization	-	Pass	-	-	
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0	
** Thermal Shock -65/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0	
**High Temp. Storage Bake	170C (420 hrs)	77/0	77/0	77/0	
**Autoclave	121C (96 hrs)	77/0	77/0	77/0	
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass	
Notes    **- Preconditioning sequence: Level 2-260C.					

<b>Qual Vehicle 2 : ADS1230IPW (MSL 2-260C)</b>					
Package Construction Details					
Assembly Site:	MLA	Mold Compound:	4206193		
# Pins-Designator, Family:	16-PW, TSSOP	Mount Compound:	4042500		
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu		
<b>Qualification:</b> <input type="checkbox"/> Plan <input checked="" type="checkbox"/> <b>Test Results</b>					
Reliability Test	Conditions	Sample Size/Fail			
		Lot# 1	Lot# 2	Lot# 3	
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0	
** Thermal Shock -65/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0	
**High Temp. Storage Bake	170C (420 hrs)	77/0	77/0	77/0	
**Autoclave	121C (384 hrs)	77/0	77/0	77/0	
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass	
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)	12/0	12/0	12/0	
Notes    **- Preconditioning sequence: Level 2-260C.					

<b>Qual Vehicle 3 : CDCVF2505PW (MSL 1-260C)</b>					
Package Construction Details					
Assembly Site:	MLA	Mold Compound:	4206193		
# Pins-Designator, Family:	8-PW, TSSOP	Mount Compound:	4042500		
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu		
<b>Qualification:</b> <input type="checkbox"/> Plan <input checked="" type="checkbox"/> <b>Test Results</b>					
Reliability Test	Conditions	Sample Size/Fail			
		Lot# 1	Lot# 2	Lot# 3	
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0	
** Thermal Shock -65/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0	
**High Temp. Storage Bake	170C (420 hrs)	77/0	77/0	77/0	
**Autoclave	121C (96 hrs)	77/0	77/0	77/0	
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass	
Moisture Sensitivity	(level 1 @ 260C peak +5/-0C)	12/0	12/0	12/0	
Notes    **- Preconditioning sequence: Level 1-260C.					

<b>Qual Vehicle 4 : SN75LVDS84ADGG (MSL 2-260C)</b>					
Package Construction Details					
Assembly Site:	MLA	Mold Compound:	4206193		
# Pins-Designator, Family:	48-DGG, TSSOP	Mount Compound:	4042500		
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu		
<b>Qualification:</b> <input type="checkbox"/> Plan <input checked="" type="checkbox"/> <b>Test Results</b>					
Reliability Test	Conditions	Sample Size/Fail			
		Lot# 1	Lot# 2	Lot# 3	
**Unbiased HAST	130C/85%RH (192 hrs)	77/0	77/0	77/0	
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0	
** Thermal Shock -65/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0	
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass	
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)	12/0	12/0	12/0	
Notes    **- Preconditioning sequence: Level 2-260C.					

<b>Qual Vehicle 5 : THS7303PW (MSL 2-260C)</b>					
Package Construction Details					
Assembly Site:	MLA	Mold Compound:	4206193		
# Pins-Designator, Family:	20-PW, TSSOP	Mount Compound:	4042500		
Lead frame (Finish, Base):	NiPdAu, Cu	Bond Wire:	0.96 Mil Dia., Cu		
<b>Qualification:</b> <input type="checkbox"/> <b>Plan</b> <input checked="" type="checkbox"/> <b>Test Results</b>					
Reliability Test	Conditions	Sample Size/Fail			
		Lot# 1	Lot# 2	Lot# 3	
**High Temp. Storage Bake	170C (1000 hrs)	77/0	77/0	77/0	
**Autoclave	121C (384 hrs)	77/0	77/0	77/0	
**T/C -65C/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0	
** Thermal Shock -65/150C	-65C/+150C (500 Cyc)	77/0	77/0	77/0	
Manufacturability (Assembly)	(per mfg. Site specification)	Pass	Pass	Pass	
Moisture Sensitivity	(level 2 @ 260C peak +5/-0C)	12/0	12/0	12/0	
Notes    **- Preconditioning sequence: Level 2-260C.					

For questions regarding this notice, e-mails can be sent to the regional contacts shown below or your local Field Sales Representative.

<b>Location</b>	<b>E-Mail</b>
USA	<a href="mailto:PCNAmericasContact@list.ti.com">PCNAmericasContact@list.ti.com</a>
Europe	<a href="mailto:PCNEuropeContact@list.ti.com">PCNEuropeContact@list.ti.com</a>
Asia Pacific	<a href="mailto:PCNAsiaContact@list.ti.com">PCNAsiaContact@list.ti.com</a>
Japan	<a href="mailto:PCNJapanContact@list.ti.com">PCNJapanContact@list.ti.com</a>